Common Defense Ploys in Breath Cases

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Breath Alcohol Analysis

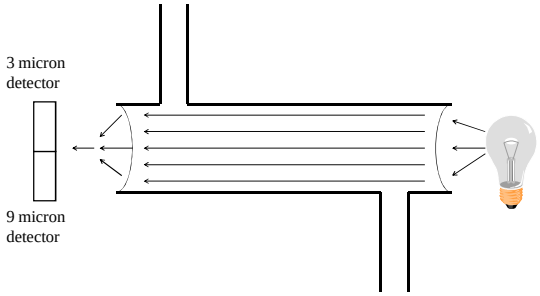
Quick Review

INTOXILYZER®

8000

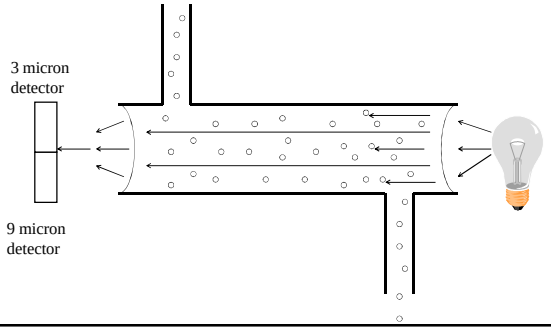
Breath Alcohol Analysis

Quick Review



Breath Alcohol Analysis

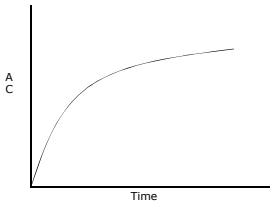
Quick Review



Breath Alcohol Analysis

Quick Review

Minimum Sample Criteria
Flow rate - 0.15 L/sec
Time – 1 sec
Volume – 1.1 L
Level Slope



Intoxilyzer 8,000 Safeguards

* Mouth Alcohol Detection
* Processor Stability Checks
* Air Blanks
* RFI (Radio Frequency Interferent) Detection
* Interferent Detection (3 & 9 micron)
* Duplicate Testing Procedure
* Calibration Checks

Breath Alcohol Analysis

Quick Review

A 15-min deprivation period

A 5-min wait between consecutive subject tests

A 0.020 agreement between consecutive duplicate subject tests

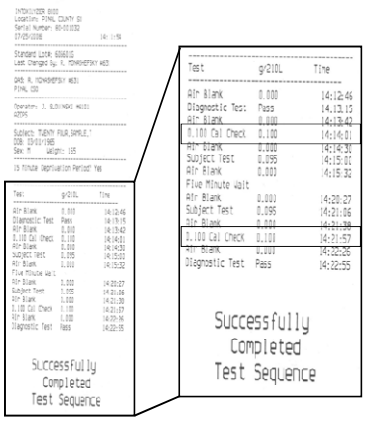
Air blanks that are EtOH and interferent-free
Bracketing concurrent calibration checks (+/- 10%)

Bracketing diagnostic checks (Checks all internal systems of instrument)

Breath Alcohol Analysis

Quick Review

28-1323(A)(5) - Calibration checks with a standard alcohol concentration solution bracketing each person's duplicate breath test are one type of records of periodic maintenance that satisfies the requirements of this section.



Breath Alcohol Ploys

Blood/Breath Ratio
RFI
Mouth Alcohol
15 Minute Deprivation Period
Breathing Patterns
Test 29ml - Report 210L
Interfering Substances
10% Off
Duplicate Test Differences
Steepling

Blood to Breath Ratio

Defense Claim

1) Defendant might have an abnormally low partition ratio causing an elevated BrAC

2) Defendant may have had a fever that caused an elevated BrAC

- Everyone's temperature rises/changes throughout the day

Blood to Breath Ratio

Arguments

USDOT mandates instruments use 2100:1

Average partition ratio is 2350:1

Large study (21582 drinkers) found 2440:1

A.R. Gainsford, A large scale study if the relationship between blood and breath alcohol concentration in New Zealand drinking drivers, J Forensic Sci. 51; 173-178; 2006

Blood to Breath Ratio

Arguments

2100:1 will underestimate a blood result 95% of the time

Defendants BrAC will typically be 10% below their blood alcohol concentration

Blood to Breath Ratio

Arguments

Theoretically, body temperature may affect the partition ratio by imparting more or less alcohol into the lungs

Study showed for every degree Celsius of fever, breath alcohol will rise 6.5%

-10% (2100:1) + 6.5%(100.4°F fever) = -3.5%

Dubowski KM, Breath-alcohol simulators: scientific basis and actual performance, Journal of Analytical Toxicology, 3, 177-182.

Blood to Breath Ratio

Temperature Arguments

Recent study demonstrated that within normal range of body temperatures (96.8°F to 99.68°F) breath alcohol concentrations not effected

Cowan, The Relationship of Normal Body Temperature, End Expired Breath Temperature, and BAC/BrAC Ratio in Physically Fit Human Test Subjects. Journal of Analytical Toxicology, Vol. 34, June 2010

Blood to Breath Ratio

Temperature Arguments

Challenge the Defense Studies

Hayward & Fox used core body temperature, artificially increased & decreased body temperature

Blood to Breath Ratio

Temperature Arguments

Irrelevant unless evidence is presented that defendant actually had elevated temperature (motion *in limine*)

Defense always presents extremes – very unlikely Defendant was at that level.

Blood to Breath Ratio

Arguments

Never relevant to 28-1381(A)(2) or 28-1382(A) charges. *Guthrie v. Jones*, 202 Ariz. 273, 43 P.3d 601 (App. 2002); *Cooperman.*

Cooperman only said it was NOT error for THAT judge to have admitted it [for (A)(1) charge] 403 weigh

Blood to Breath Ratio

Arguments

Consider a Motion *In Limine* to Preclude

If the Evidence is Allowed:

- Most defense experts will admit 2100 to 1 partition ratio is to defendant's benefit
- Should admit recognized average is 2350 to 1
- Expert does not know defendant's ratio – (speculation)
- Limiting instruction [(only relevant to the (A)(1)]

RFI

Defense Claim

RFI might have caused the Intoxilyzer to read high

Mark Stoltman did a "study" while at Phoenix PD that showed RFI can raise a breath test result

0.020 and .015 on alcohol free test

RFI

Arguments

RFI has to be present

Intox has an RFI detector

Duplicate tests will rule it out

Intox is lined with copper paint

RFI "Study"

Arguments

Never validated

Never submitted for publication

RFI detector turned down or off

Searched for the "Sweet Spot"

New software

Mouth Alcohol

Defense Claim

Defendant burped before/while blowing into instrument

Defendant had gum, chewing tobacco, dentures in mouth that captured mouth alcohol & caused a high reading

Mouth Alcohol

Argument

Burp is just air – stomach contents containing alcohol would need to be brought up into the mouth to have any effect (when was last drink?)

Three Safeguards
15 minute deprivation period
Duplicate test (0.020 agreement)
Mouth alcohol detection

15 Minute Deprivation Period

Defense Claim

Deprivation period listed as only 14 minutes and 32 seconds

Officer left the room in the middle of deprivation period

15 Minute Deprivation Period

Argument

Unlikely mouth alcohol effected test

Still have two valid safeguards in place

But… one important safeguard against mouth alcohol not valid

Criminalist will be of little help

Officer/TSRP - your only hope

Breathing Patterns

Defense Claim

Defendant hyperventilated before blowing into instrument

Defendant hypoventilated before blowing into instrument

Holding breath caused higher breath test

Breathing Patterns

Argument

Irrelevant unless there is evidence defendant held breath (motion *in limine*)

Have officer testify defendant did not hold breath prior to test

In study, subjects held breath for 30 seconds = 15% increase

Trained officer would notice this

Hyperventilation dropped by 10%

Duplicate test agreement

Measure 29ml – Report 210L

Defense Claim

The Intoxilyzer 8000 sample chamber only holds 29ml of breath

When the value is converted to g/210L, any error in the measurement is exponentially increased

Measure 29ml – Report 210L

Argument

Intoxilyzer is calibrated in g/210L

There is not a conversion of numbers

Calibrated in g/210L – Reported in g/210L

Interfering Substances

Defense Claim

Defendant is diabetic – acetone caused high reading

Body breaks down ethanol into acetaldehyde which caused high reading

Defendant is a painter, bartender, etc.

Interfering Substances

Argument

Intoxilyzer 8000 measures alcohol in the 9 micron range

Compares 3 micron and 9 micron range to notify officer of any interfering substances

Body is able to eliminate fumes inhaled before concentration builds in body

Diabetes/Acetone

Flaxmayer – *A Discussion Guide: Alcohol and Breath Testing.*

Odor – acetone has distinctive fruity odor.

No Diabetic, Who Can Walk and Provide a Breath Test, Can Produce Enough Acetone in Breath to Register on Intoxilyzer.

Diabetic Will Stop Producing Acetone When ETOH is Introduced Into System.

10% Off

Defense Claim

Arizona Rules require a calibration check to be within ±10% of the known value

Subject test could be as much as 10% high (10% margin of error)

(Unfortunately, many officers [& judges] have fallen into this same trap)

10% Off

Argument

Does not entitle defendant to a judgment of acquittal of ARS §§ 28-1381(A)(2) or 28-1382 charges
Question of fact which should be submitted to jury

State ex rel. McDougall v. Superior Court (*Gurule*, RPI), 178 Ariz. 544, 875 P.2d 203 (App. 1994).

10% Off

Argument

Get defense expert to admit best indicators of how accurately instrument is working at time of any given test are the before and after calibration checks

Look at data for your test – it is very unlikely test is off by 10%

Generally instruments are either right on or reading a little low

10% Off

Argument

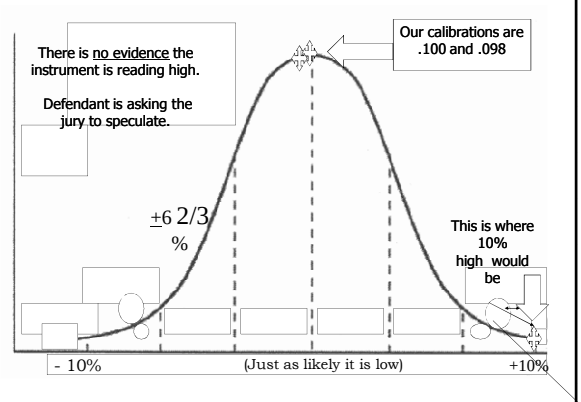
10% Off

Argument

Demonstrate defense is partaking in mere speculation. There is no evidence instrument is reading high

To be certified by DPS, must be capable of measuring alcohol to within ± 5%

CMI, Inc. states 3%



Difference Between Duplicates

Defense Claim

1st Breath Test = 0.158 g/210L

2nd Breath Test = 0.177 g/210L

Mouth alcohol might have been present in both samples

Defendant's alcohol concentration was rising

Difference Between Duplicates

Argument

Difference is still within accepted 0.020 agreement

Difference most likely caused by quality of the sample given

Two measurements 5 – 10 min. are not enough to determine if subject is still absorbing alcohol or eliminating alcohol

Steepling

Defense Claim

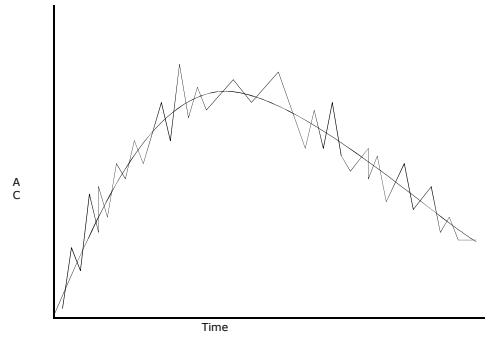
Dubowski found that the alcohol concentration in the body is changing by large amounts over short periods of time

Absorption, Distribution, and Elimination of Alcohol: Highway Safety Aspects Dubowski 1985

Can't do retrograde

Steepling

Defense Claim



Breath Alcohol Analysis

Quick Review

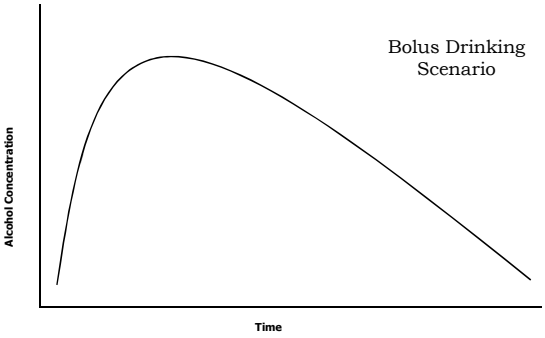
Absorption – Alcohol entering the body

Elimination – Alcohol leaving the body

Breath Alcohol Analysis

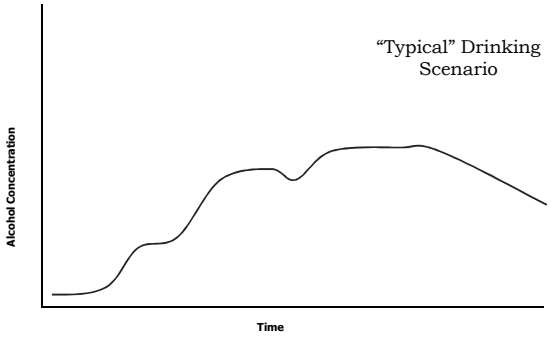
Quick Review

Bolus Drinking Scenario



Breath Alcohol Analysis

Quick Review



Steepling

Arguments

Criminalist or Defense Expert

Dubowski study was flawed

Single test – two digits

Use a different breath test instrument

Peer reviewed literature since has shown no 'steeping' effect

Questions?

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